

REMARKS

In the Office Action the Examiner noted that claims 1-34 are pending in the application. The Examiner rejected claims 1-10, 18-22, 33, and 34, and objected to claims 11-17 and 23-32. The Examiner's rejections are traversed below, and reconsideration of all rejected claims is respectfully requested.

Claim Rejections Under 35 USC §103

In item 2 on pages 2-3 the Examiner rejected claims 1-3, 7, and 9-10 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,775,216, issued to Kelly et al. (hereinafter referred to as "Kelly") in view of U.S. Patent No. 5,701,283, issued to Alon et al. (hereinafter referred to as "Alon"). The Applicant respectfully traverses the Examiner's rejection of these claims.

Kelly

Kelly discloses a method of writing data on a disk, the method including writing a first subset of data with a write power that is adjusted in a closed loop operation, measuring the write power used to write the first subset of data, and using this measure value to control a write power with an open loop operation to write a second subset of data after a write interruption (Column 2, Lines 37-50). By using the open loop control operation after a normal write operation has been interrupted, the laser power can increase from a read level to a write level in only 3 to 10 nanoseconds, as opposed to the approximately 10 milliseconds required in the closed loop control operation (Column 7, Line 54 through Column 8, Line 18).

Alon

Alon discloses a method and apparatus for simultaneously reading data from multiple tracks of an optical disk at a high rate (Abstract). This is accomplished by processing, tracking, and reading data from multiple adjacent tracks simultaneously (Column 2, Lines 42-46). An optical pickup is provided with a detector matrix which comprises a rectangular array of pixels, configured for time delay and integration, to detect the multiple tracks.

The Present Claimed Invention Patentably Distinguishes Over the Cited References

Claim 1 of the present application recites "generating an error voltage between an output

voltage of the laser diode sampled during an automatic power control period and a reference voltage; and performing proportional-integral processing on the error voltage to generate a compensated control voltage and applying the compensated control voltage to the laser diode." At least these features are not disclosed in the cited references.

The Examiner states that "Kelly discloses processing the error voltage (302) into a compensated control voltage and applying it to a laser diode (70), but does not disclose using proportional-integral processing on the error voltage." The Examiner then goes on to state that "Alon discloses performing proportional-integral processing (col. 8, equ. 1) on a voltage signal to generate a compensated control voltage that is more smoothed and averaged out (col. 8, lines 20-50)."

The Applicant respectfully submits that Alon does not disclose "performing proportional-integral processing." The equation cited by the Examiner merely states that, in order to define the track boundaries, the sum of the unprocessed signals from pixel $j+2$ and $j-2$ is multiplied by a predetermined constant, and that product is subtracted from the unprocessed signal from pixel j to determine the processed signal from pixel j . The processed signals are then squared to obtain signals related to the total illumination energy received by each pixel, and integrated to smooth the signals and average out the high frequency modulation caused by the presence of the data spots in the light reflected from the optical disk (Column 8, Lines 20-50).

However, the integration of these squared processed signals is not tantamount to "performing proportional-integral processing," as is recited in claim 1 of the present application. Proportional-integral processing comprises a control process in which the control signal is a linear combination of an error signal and its integral, and, as explained above, this is not the process disclosed in Alon. Therefore, Alon does not cure the deficiency of Kelly regarding claim 1 of the present application. For a proper §103 rejection, the combination of the cited references must disclose each and every feature of the claimed invention. As the combination of Kelly and Alon does not disclose at least the features discussed above, the Applicant respectfully requests the withdrawal of the §103 rejection.

Further, even if the cited references did combine to disclose all of the features of claim 1 of the present application, and the Applicant respectfully submits that they do not, there is no motivation to combine the references. MPEP § 2142 states that "[w]hen the motivation to combine the teachings of the references is not immediately apparent, it is the duty of the Examiner to explain why the combination of the teachings is proper." Here, the Examiner has simply stated, with no evidence to support the assertion, that "[i]t would have been obvious to one of ordinary skill in the art at the time of the invention to use the processing steps disclosed in Alon with the processing steps disclosed in Kelly to smooth out the signal as disclosed in Alon."

The Examiner is required to present actual evidence and make particular findings related to the motivation to combine the teachings of the references. In re Kotzab, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000); In re Dembiczak, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999). Broad conclusory statements regarding the teaching of multiple references, standing alone, are not “evidence.” Dembiczak, 50 USPQ2d at 1617. “The factual inquiry whether to combine the references must be thorough and searching.” In re Lee, 61 USPQ2d 1430, 1433 (Fed. Cir. 2002) (citing McGinley v. Franklin Sports, Inc., 60 USPQ2d 1001, 1008 (Fed. Cir. 2001)). The factual inquiry must be based on objective evidence of record, and cannot be based on subjective belief and unknown authority. Id. at 1433-34. The Examiner must explain the reasons that one of ordinary skill in the art would have been motivated to select the references and to combine them to render the claimed invention obvious. In re Rouffet, 47 USPQ2d 1453, 1459 (Fed. Cir. 1998).

The Applicant respectfully submits that the references do not support the Examiner’s assertion that the combination would have been obvious, for several reasons. As Kelly discloses a method of writing data on a disk such that a write power can be quickly controlled in order to pick up after an interruption in the writing, there would be no reason for one of ordinary skill in the art to combine Alon, which discloses a method of simultaneously reading information from multiple tracks of a disc. The reflective portions between tracks of the disc are the motivation for the process disclosed in Alon, and as Kelly is not concerned with processing information for multiple tracks of a disc simultaneously, there would be no motivation for incorporation the disclosure of Alon. Further, as Kelly disclose a method of writing to a single packet of a single track of a disc in a speedy fashion, and Alon discloses reading data from a disc in multiple tracks and processing information from all of the read tracks, which would inherently slow down the processing of the single targeted track, these disclosures actually teach away from one another.

§103 Rejections Incorporating Oku

In item 3 on pages 4-5 of the Office Action the Examiner rejected claims 4-6 and 8 under 35 U.S.C. §103(a) as being unpatentably over U.S. Patent No. 5,222,072, issued to Oku (hereinafter referred to as “Oku”) in view of Kelly, and further in view of Alon.

The Examiner states that “Oku does not disclose generating an error voltage or proportional integral processing,” but that the deficient feature is disclosed in Kelly and Alon. However, as previously discussed, Alon does not disclose performing proportional-integral processing, nor is there any motivation to combine the cited references. Further, as Oku is not drawn to an apparatus to simultaneously read data from multiple tracks of a disc, the Applicant respectfully submits that there is no motivation to combine Oku with the previously discussed

references, and actually teaches away from the combination.

Therefore, as claims 4 and 8 both recite “performing proportional-integral processing on the error voltage,” the Applicant respectfully submits that claims 4 and 8 also patentably distinguish over the cited references for at least these reasons.

Claims 5-6 depend from claim 4 and include all of the features of that claim plus additional features which are not taught or suggested by the cited references. Therefore, it is respectfully submitted that claims 5-6 also patentably distinguish over the cited references.

§103 Rejections Incorporating Oku

In item 4 on pages 5-6, the Examiner rejected claims 18, 20-21, and 33-34 under 35 U.S.C. §103(a) as being unpatentably over U.S. Patent 5,276,781, issued to Chang et al. (hereinafter referred to as “Chang”) in view of Kelly, and further in view of Alon.

The Examiner states that Chang and Kelly do not disclose “the recited processing method,” and goes on to state that “Alon discloses performing proportional-integral processing on a voltage to smooth out the signal.” However, as previously discussed, Alon does not disclose performing proportional-integral processing, nor is there any motivation to combine the cited references. Further, as Chang is not drawn to an apparatus to simultaneously read data from multiple tracks of a disc, but rather to a laser printer controller, the Applicant respectfully submits that there is no motivation to combine Oku with the previously discussed references, and actually teaches away from the combination.

Therefore, as claims 18 recites “performing proportional-integral processing on the effective output voltage,” and claims 20, and 33-34 all recite “performing proportional-integral processing on the error voltage,” the Applicant respectfully submits that claims 18, 20, and 33-34 also patentably distinguish over the cited references for at least these reasons.

Claim 21 depends from claim 20 and includes all of the features of that claim plus additional features which are not taught or suggested by the cited references. Therefore, it is respectfully submitted that claim 21 also patentably distinguishes over the cited references.

Remaining §103 Rejections

In item 5 on pages 6-7 of the Office Action the Examiner rejected claims 19 and 22 under 35 U.S.C. §103(a) as being unpatentably over Chang in view of Kelly and Alon as referenced above, and further in view of Oku.

Claims 19 and 22 depend from claims 18 and 20, respectively, and include all of the

features of those claims plus additional features which are not taught or suggested by the cited references. As discussed above, the cited references do not combine to disclose the depended upon claims. Therefore, it is respectfully submitted that claims 19 and 22 also patentably distinguish over the cited references for at least these reasons.

Allowable Subject Matter

In item 6 on page 8 of the Office Action the Examiner objected to claims 11-17 and 23-32 as being dependent upon a rejected base claim, but indicated that these claims would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 11-17 depend from claim 9, and claims 23-32 depend from claim 20. As discussed above, claims 9 and 20 both patentably distinguish over the cited references. Therefore, as claims 11-17 and 23-32 include all of the features of their respective base claims plus additional features which are not taught or suggested by the cited references, it is respectfully submitted that claims 11-17 and 23-32 also patentably distinguish over the cited references.

Summary

There being no further outstanding objections or rejections, it is respectfully submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

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Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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